C L A I M S

1. A data transmission system for transmitting encoded data via a transmission channel, said encoded data composed of first data generated based on a plurality of original data having correlations on the time axis in the initial frame timing thereof and of a plurality of second data generated respectively in a plurality of frame timings subsequent to said initial frame timing, said first data having an independent meaning alone and said plurality of second data containing mainly a difference between the original data of a current frame and the original data of the preceding frame respectively, said system comprising:

transmission quality monitoring means for monitoring the quality of said transmission channel in the course of transmitting said encoded data; and

transmission control means for transmitting the first data in place of the second data, when said transmission quality monitoring means has detected that the quality of the transmission channel deteriorated to a preset first state and thereafter has been restored to a preset second state.

2. The data transmission system according to claim 1, wherein:

said transmission quality monitoring means includes means for monitoring the reception quality of the encoded data transmitted via said transmission

channel at the communication device on the reception side, and

said transmission control means includes

detecting means for detecting the deterioration of the reception quality to said first state and the subsequent restoration of the reception quality to said second state on the basis of the result of said transmission quality monitoring means monitoring the reception quality,

means for causing the communication device on the reception side to notify the communication device on the transmission side of a request for the transmission of the first data when said detecting means has detected the restoration of the reception quality to said second state, and

means for in response to the request for the transmission, causing the communication device on the transmission side to transmit the first data to the communication device on the reception side in place of the second data.

3. The data transmission system according to claim 1, wherein:

said transmission quality monitoring means includes

monitoring means for causing the communication device on the reception side to monitor the reception quality of the encoded data transmitted

via said transmission channel, and

notifying means for notifying the communication device on the transmission side of a monitored information obtained by the monitoring means, and

said transmission control means includes

means for causing the communication device on the transmission side to detect the deterioration of the reception quality to said first state at the communication device on the reception side and the subsequent restoration of the reception quality to said second state on the basis of the monitored information notified from the communication device on the reception side, and

means for, when the restoration of the reception quality to said second state has been detected, causing the communication device on the transmission side to transmit the first data to the communication device on the reception side in place of the second data.

4. The data transmission system according to claim 1, wherein, when two-way data transmission between the communication device on the transmission side and that on the reception side is performed,

said transmission quality monitoring means includes

means for causing the communication device on the reception side to estimate the reception quality of

the encoded data at the communication device on the reception side on the basis of the reception quality of a transmission data transmitted from the communication device on the reception side, and

said transmission control means includes

means for detecting the deterioration of the reception quality to said first state at the communication device on the reception side and the subsequent restoration of the reception quality to said second state on the basis of the result of estimating said reception quality, and

means for, when the restoration of the reception quality to said second state has been detected, causing the communication device on the transmission side to transmit the first data to the communication device on the reception side in place of the second data.

5. The data transmission system according to claim 1, wherein, when the reception quality is below a preset first threshold value continuously for a first time or longer, said transmission control means detects that the reception quality has deteriorated to said first state.

6. The data transmission system according to claim 1, wherein, when the reception quality is above a preset second threshold value for a second time or longer after the deterioration of the reception

quality to said first state has been detected, said transmission control means detects that the reception quality has been restored to said second state.

7. A communication device on the reception side which receives encoded data transmitted via a transmission channel from a communication device on the transmission side, said encoded data composed of first data generated based on a plurality of original data having correlations on the time axis in the initial frame timing thereof and of a plurality of second data generated respectively in a plurality of frame timings subsequent to said initial frame timing, said first data having an independent meaning alone and said plurality of second data containing mainly a difference between the plurality of original data of the current frame and the original data of the preceding frame respectively, and reconstructs the plurality of original data on the basis of the received first data and plurality of second data, said communication device on the reception side comprising:

transmission quality monitoring means for monitoring the reception quality of the encoded data transmitted via said transmission channel; and

reception control means for, when said transmission quality monitoring means has detected that the reception quality deteriorated to a preset first state and thereafter has been restored to a preset

second state, notifying the communication device on the transmission side of a request for the transmission of the first data and causing the communication device on the transmission side to transmit the first data in place of the second data.

8. The communication device on the reception side according to claim 7, wherein said reception control means transmits said request for the transmission repeatedly at specific intervals until it has acknowledged the reception of the first data from the communication device on the transmission side.

9. The communication device on the reception side according to claim 7, further comprising:

recording means for recording said received encoded data or the plurality of original data reconstructed on the basis of said received encoded data; and

record control means for deleting the encoded data received when said reception quality deteriorated to said first state or the original data reconstructed on the basis of the received encoded data from said received encoded data or the original data recorded in said recording means.

10. The communication device according to claim 9, wherein said record control means notifies the communication device on the transmission side of a request for the transmission of the first data,

acknowledges that it has received the first data from the communication device on the transmission side in response to the notice, and thereafter deletes said received encoded data or original data.

11. The communication device according to claim 9, wherein said record control means deletes said received encoded data or original data after the communication is completed.

12. The communication device according to claim 9, wherein said record control means includes means for monitoring the recording capacity of said recording means and deletes said received encoded data or original data when the remaining recording capacity of said recording means has decreased below a specific amount.

13. A communication device on the reception side which receives encoded data transmitted via a transmission channel from a communication device on the transmission side, said encoded data composed of first data generated based on a plurality of original data having correlations on the time axis in the initial frame timing thereof and of a plurality of second data generated respectively in a plurality of frame timings subsequent to said initial frame timing, said first data having an independent meaning alone and said plurality of second data containing mainly a difference between the plurality of original data of the preceding

frame respectively, and reconstructs the plurality of original data on the basis of the received first data and plurality of second data, said communication device on the reception side comprising:

transmission quality monitoring means for monitoring the reception quality of the encoded data transmitted via said transmission channel; and

reception control means for causing the communication device on the transmission side to detect the deterioration of the reception quality of its own device to said first state and the subsequent restoration of the reception quality to said second state by notifying the communication device on the transmission side of the monitored information obtained by said transmission quality monitoring means and, when the restoration of the reception quality to said second state has been detected, causing the communication device on the transmission side to transmit the first data in place of the second data.

14. The communication device according to claim 13, further comprising:

recording means for recording said received encoded data or the plurality of original data reconstructed on the basis of said received encoded data; and

record control means for deleting the encoded data received when said reception quality deteriorated to

said first state or the original data reconstructed on the basis of the received encoded data from said received encoded data or original data recorded in said recording means.

15. The communication device according to claim 14, wherein said record control means notifies the communication device on the transmission side of a request for the transmission of the first data, acknowledges that it has received the first data from the communication device on the transmission side in response to the notice, and thereafter deletes said received encoded data or original data.

16. The communication device according to claim 14, wherein said record control means deletes said received encoded data original data after the communication is completed.

17. The communication device according to claim 14, wherein said record control means includes means for monitoring the recording capacity of said recording means and deletes said received encoded data or original data when the remaining recording capacity of said recording means has decreased below a specific amount.

18. A communication device on the transmission side which transmits encoded data via a transmission channel to a communication device on the transmission side, said encoded data composed of first data

generated based on a plurality of original data having correlations on the time axis in the initial frame timing thereof and of a plurality of second data generated respectively in a plurality of frame timings subsequent to said initial frame timing, said first data having an independent meaning along and said plurality of second data containing mainly a difference between the plurality of original data of the preceding frame respectively, said communication device on the transmission side comprising:

transmission control means for transmitting the first data in place of the second data, when it has been detected that the quality of the transmission channel deteriorated to a preset first state and thereafter has been restored to a preset second state.

19. The communication device on the transmission side according to claim 18, wherein said transmission control means includes

means for receiving a request for the transmission of the first data transmitted from the communication device on the reception side, and

means which, when receiving said request for the transmission, regards the deterioration of the quality of said transmission channel to said first state and the subsequent restoration of the quality to said second state as having been detected and transmits the first data to the communication device on the reception

side in place of the second data.

20. The communication device on the transmission side according to claim 18, wherein said transmission control means includes

means for receiving the monitored information about the quality of the transmission channel transmitted from the communication device on the reception side,

means for detecting the deterioration of the reception quality to said first state at the communication device on the reception side and the subsequent restoration of the reception quality to said second state on the basis of said monitored information received, and

means for, when the restoration of the reception quality to said second state has been detected, transmitting the first data to the communication device on the reception side in place of the second data.

21. The communication device on the transmission side according to claim 18, wherein, when two-way data communication with the communication device on the reception side is performed, said transmission control means includes

means for estimating the reception quality of the encoded data at the communication device on the reception side on the basis of the reception quality of a transmission data transmitted from the communication

device on the reception side,

means for detecting the deterioration of the reception quality to said first state at the communication device on the reception side and the subsequent restoration of the reception quality to said second state on the basis of the result of estimating said reception quality, and

means for, when the restoration of the reception quality to said second state has been detected, transmitting the first data to the communication device on the reception side in place of the second data.

22. The communication device according to claim 21, further including means for, when the restoration of the reception quality to said second state has been detected, transmitting a request for the transmission of the first data to the communication device on the reception side and causing the communication device on the reception side to transmit the first data in place of the second data.